State of Wyoming

Department of Health

Wyoming Influenza Summary Report
2013-2014 Season

Thomas O. Forslund
Director

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Public Health Division
Wendy E. Braund, MD, MPH, MSEd, FACPM
State Health Officer and Senior Administrator

Additional information and copies may be obtained from:
Reginald C. McClinton
Infectious Disease Epidemiology Unit
Wyoming Department of Health
6101 Yellowstone Road, Suite 510
Cheyenne, WY 82002
307-777-8640
307-777-5573
reginald.mcclinton@wyo.gov

WYOMING INFLUENZA SUMMARY REPORT, 2013-2014 SEASON
(September 29, 2013 – May 17, 2014)

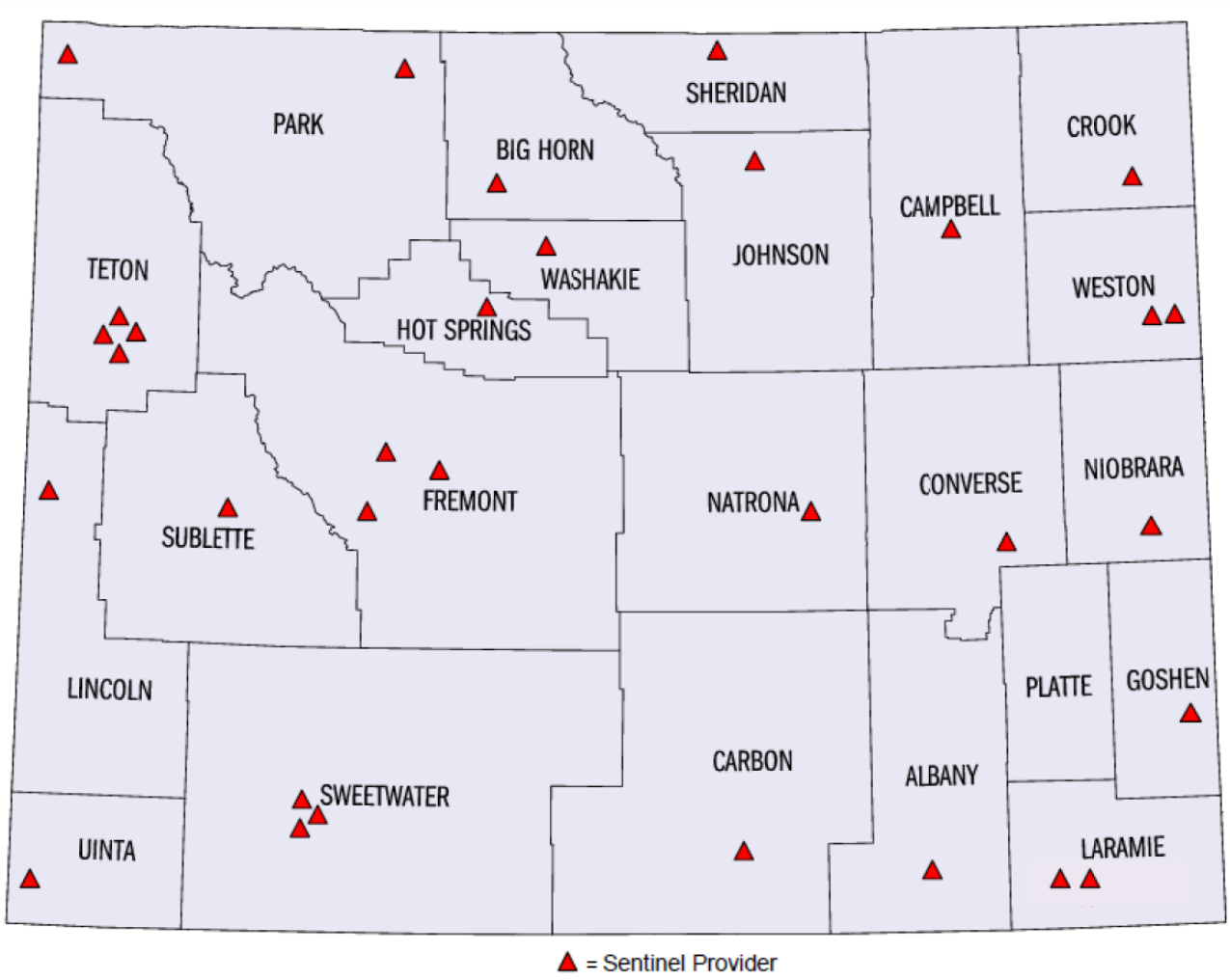
SYNOPSIS

Influenza activity was moderate in severity during the 2013-2014 influenza season, as determined by the number of influenza-associated deaths and the number of reported cases of laboratory-confirmed influenza. At the start of the 2013-2014 influenza season, healthcare providers across Wyoming reported low levels of influenza activity. The number of reported cases and the percentage of outpatient visits for influenza-like illness (ILI) significantly increased in December 2013. The number of reported cases in Wyoming peaked during the week ending January 11, 2014 (MMWR Week 02). Activity throughout the state remained elevated until February 2014 when influenza activity decreased gradually. For the remainder of the season, Wyoming experienced low levels of influenza activity. The 2009 influenza A (H1N1) pandemic virus was the predominant influenza virus circulating in Wyoming during the 2013-2014 influenza season. Since it emerged in 2009, the 2009 influenza A (H1N1) virus continues to circulate each season. However, this was the first influenza season since the 2009-2010 influenza season that the 2009 influenza A (H1N1) virus has been the predominant circulating influenza virus in Wyoming.

SURVEILLANCE AND THE INFLUENZA SENTINEL PROVIDER NETWORK

Influenza is a reportable disease in the State of Wyoming. The Wyoming Department of Health (WDH) receives reports of rapid influenza diagnostic test (RIDT), direct fluorescent antibody (DFA), indirect fluorescent antibody (IFA), polymerase chain reaction (PCR), and cell culture results from physicians, clinics, hospitals and laboratories across the state and the nation. The surveillance program relies on these sectors to test and report all positive test results. In addition, Wyoming has a network of influenza sentinel providers located across the state. An influenza sentinel provider, or Influenza-like Illness Surveillance Network (ILINet) provider, conducts surveillance for ILI in collaboration with the WDH and the Centers for Disease Control and Prevention (CDC). ILINet providers submit reports each week, even when they observe no influenza or ILI activity. Additionally, the ILINet providers collect specimens from a small number of patients with ILI. The providers submit the samples to the Wyoming Public Health Laboratory (WPHL) for specialized influenza testing. This information often provides public health officials the earliest identification of circulating influenza virus types, subtypes, and strains during the influenza season. Map 1 indicates the locations of healthcare providers enrolled in the ILINet Provider - Influenza Surveillance Program during the 2013-2014 influenza season.

MAP 1: NETWORK OF ILINET PROVIDERS BY COUNTY
WYOMING, 2013-2014 INFLUENZA SEASON



Thirty-two healthcare organizations enrolled as ILINet providers during the 2013-2014 influenza season. A major goal of the WDH-Infectious Disease Epidemiology Unit is to recruit and maintain ILINet providers from every county in the state, including multiple municipalities and various types of practices within each county. This season, 22 of Wyoming's 23 counties had ILINet providers enrolled in the program. Data from the network of ILINet providers are critical for monitoring the impact of influenza. Additionally, public health officials can use the data in combination with other influenza surveillance data, to guide prevention and control activities, vaccine strain selection, and patient care. Providers of any specialty (e.g., family practice, internal medicine, pediatrics, infectious diseases) in any type of practice (e.g., private practice, public health clinic, emergency room, university student health center) are eligible to be ILINet providers. The sentinel provider program involves two major components: weekly ILI reporting and laboratory specimen collection.

The first component, weekly ILI reporting, consists of recording and reporting summary data (total number of patient visits for any reason and the number of patient visits for ILI by age group) each week to CDC via the ILINet website. The influenza sentinel provider program, also known as the ILINet provider program, consists of approximately 3,000 healthcare providers in all 50 states and several United States Territories. The program provides public health officials with a source of outpatient illness surveillance during the influenza season. The ILI case definition used for national surveillance is {1} a fever ($\geq$100.0° F or 37.8° C) and {2} a cough and/or sore throat in the absence of a known cause other than influenza. The design of the ILI case definition is to capture patients with influenza-like illnesses; therefore, providers are not capturing only influenza cases. Consequently, some patients will meet the ILI case definition without having the disease of influenza. ILINet providers submitted reports weekly through the ILINet website beginning September 29, 2013 (MMWR Week 40); the reports continued until September 27, 2014 (MMWR Week 39). Some of the ILINet providers discontinued reporting on May 17, 2014 (MMWR Week 20). Historically, the twentieth week of the year marks the end of the influenza season. However, in recent years, CDC requested that ILINet providers continue to report throughout the summer. Year-round influenza surveillance provides a baseline level of influenza activity; this process functions to establish the annual epidemic thresholds of influenza.

The second component, laboratory specimen collection, involves collecting specimens from a small number of patients with ILI each influenza season. Healthcare providers submit specimens to the WPHL for specialized influenza testing. The WPHL performs reverse transcriptase – polymerase chain reaction (RT-PCR). In addition, WPHL forwards a subset of the specimens submitted by ILINet providers to CDC for influenza culture testing. This testing often provides the earliest identification of circulating influenza virus types, subtypes, and strains during the current influenza season. During a typical influenza season, laboratory and epidemiology officials will utilize the ILINet provider program as a major part of influenza surveillance for the WDH. In addition, the WPHL is a World Health Organization (WHO) Collaborating Laboratory. As a WHO Collaborating Laboratory, the WPHL reports the total number of respiratory specimens tested and the number of positive influenza specimens to CDC each week. The participating ILINet providers are offered summaries of state and national influenza data, free subscriptions to CDC's *Morbidity and Mortality Weekly Report*, and *Emerging Infectious Diseases Journal*, and viral isolation test kits for free influenza testing at the WPHL. Finally, the most important consideration is the data provided by ILINet providers are critical for protecting the public's health. For more information on the Influenza Sentinel Surveillance Network, or if you are interested in becoming an ILINet provider, please contact the WDH-Infectious Disease Epidemiology Unit at (307) 777-8640.

REPORTED CASES

Wyoming reported 2,259 laboratory-confirmed influenza cases (RIDT, DFA, PCR, or cell culture positive test result) during the 2013-2014 influenza season. Healthcare providers reported the first positive cases for the 2013-2014 influenza season during the week ending October 5, 2013 (MMWR Week 40). Reporting of influenza peaked the week ending January 11, 2014 (MMWR Week 02) when 303 cases were reported. In comparison, during the 2012-2013 influenza season, reporting of influenza peaked the week ending December 22, 2012 (MMWR Week 51) when 502 cases were reported. Chart 1 and Table 1 display the number of cases reported by week. The WDH requires healthcare providers and laboratories to report all positive influenza laboratory tests; however, not all providers report these results. Additionally, many ill persons do not seek medical care, and not all healthcare providers test for the disease during a medical visit. Therefore, comparing reported cases of influenza from week-to-week or season-to-season may not be valid, as many factors influence both testing and reporting.

CHART 1: REPORTED CASES OF INFLUENZA (RIDT, DFA, PCR, & LAB CULTURE) WYOMING, (2009-2010 TO 2013-2014)

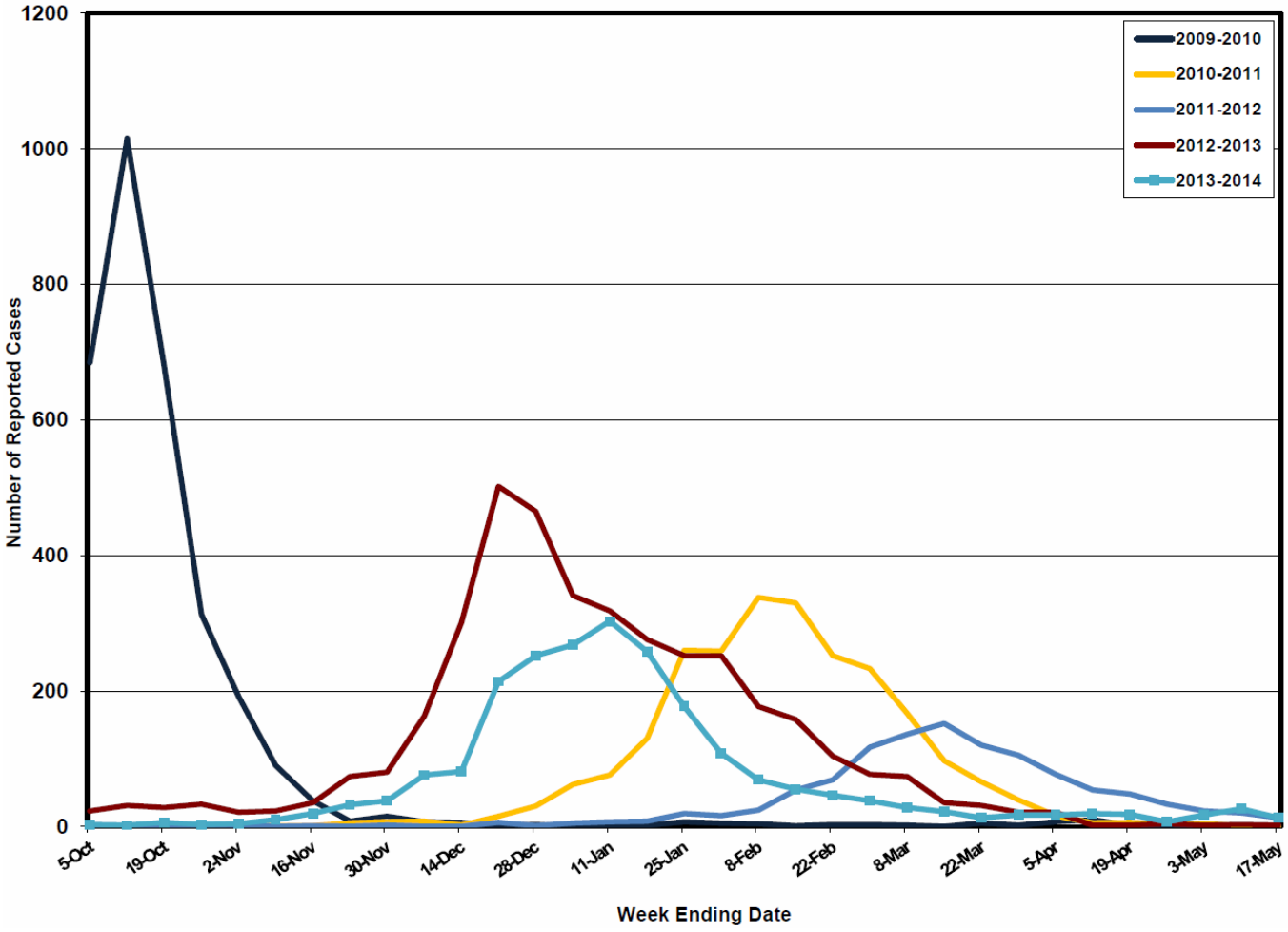


TABLE 1: REPORTED CASES OF INFLUENZA; WYOMING, 2013-2014 INFLUENZA SEASON

Week Ending	Number
05-Oct	3
12-Oct	2
19-Oct	6
26-Oct	3
02-Nov	4
09-Nov	10
16-Nov	19
23-Nov	32
30-Nov	38
07-Dec	76
14-Dec	81
21-Dec	214
28-Dec	252
04-Jan	268
11-Jan	303
18-Jan	258
25-Jan	177
01-Feb	108
08-Feb	69
15-Feb	55
22-Feb	46
01-Mar	38
08-Mar	28
15-Mar	22
22-Mar	13
29-Mar	17
05-Apr	17
12-Apr	19
19-Apr	18
26-Apr	7
03-May	17
10-May	26
17-May	13
Total	2259

County	Number
Albany	31
Big Horn	22
Campbell	507
Carbon	63
Converse	57
Crook	24
Fremont	133
Goshen	39
Hot Springs	33
Johnson	6
Laramie	553
Lincoln	13
Natrona	288
Niobrara	6
Park	76
Platte	33
Sheridan	69
Sublette	38
Sweetwater	133
Teton	46
Uinta	46
Washakie	30
Weston	13
Unknown	0
Total	2259

Age	Number
0-4	476
5-10	361
11-19	226
20-39	598
40-59	440
60+	158
Unknown	0
Total	2259

Gender	Number
Male	1145
Female	1114
Total	2259

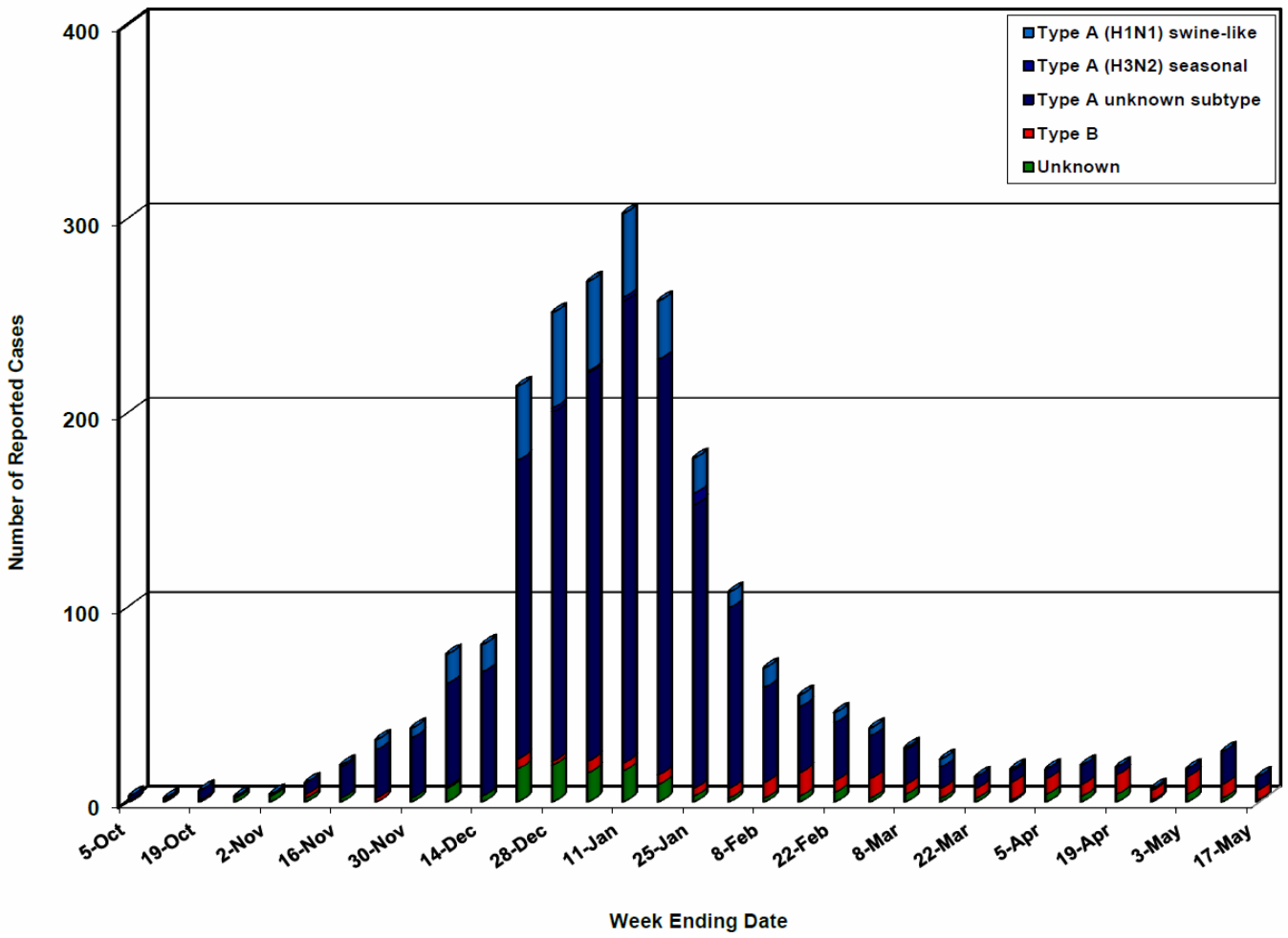
Type	Number
A	1968
B	149
Unknown	142
Total	2259

Subtype (A)	Number
A (H3N2)	12
A (H1N1) 2009	303
A Unknown	1653
Total	1968

LABORATORY DATA

Of the 2,259 reported cases, 1,968 (87.1%) were type A viruses, 149 (6.6%) were type B viruses, and 142 (6.3%) were unknown influenza virus types. Healthcare providers and laboratories confirmed nine cases by DFA; two cases by cell culture; and 1,916 cases by RIDT only. The WPHL confirmed 246 of these cases by PCR testing. Other laboratories (medical reference laboratories and public health laboratories) confirmed an additional 86 cases by PCR testing. During the 2013-2014 influenza season, the WPHL tested a total of 657 specimens for influenza viruses and 246 (37.4%) were positive. The WPHL confirmed the first positive PCR specimen during the week ending October 26, 2013 (MMWR Week 43), and confirmed the last positive specimen during the week ending April 19, 2014 (MMWR Week 16). Among the 246 positive influenza specimens tested at the State's public health laboratory, 226 (91.9%) were 2009 influenza A (H1N1) viruses; 11 (4.5%) were influenza A (H3N2); eight (3.2%) were Influenza B viruses; and one (0.4%) was an infection with an unknown influenza A virus (see chart 2 below).

CHART 2: REPORTED CASES OF INFLUENZA BY VIRUS TYPE & SUBTYPE
WYOMING, 2013 - 2014 INFLUENZA SEASON



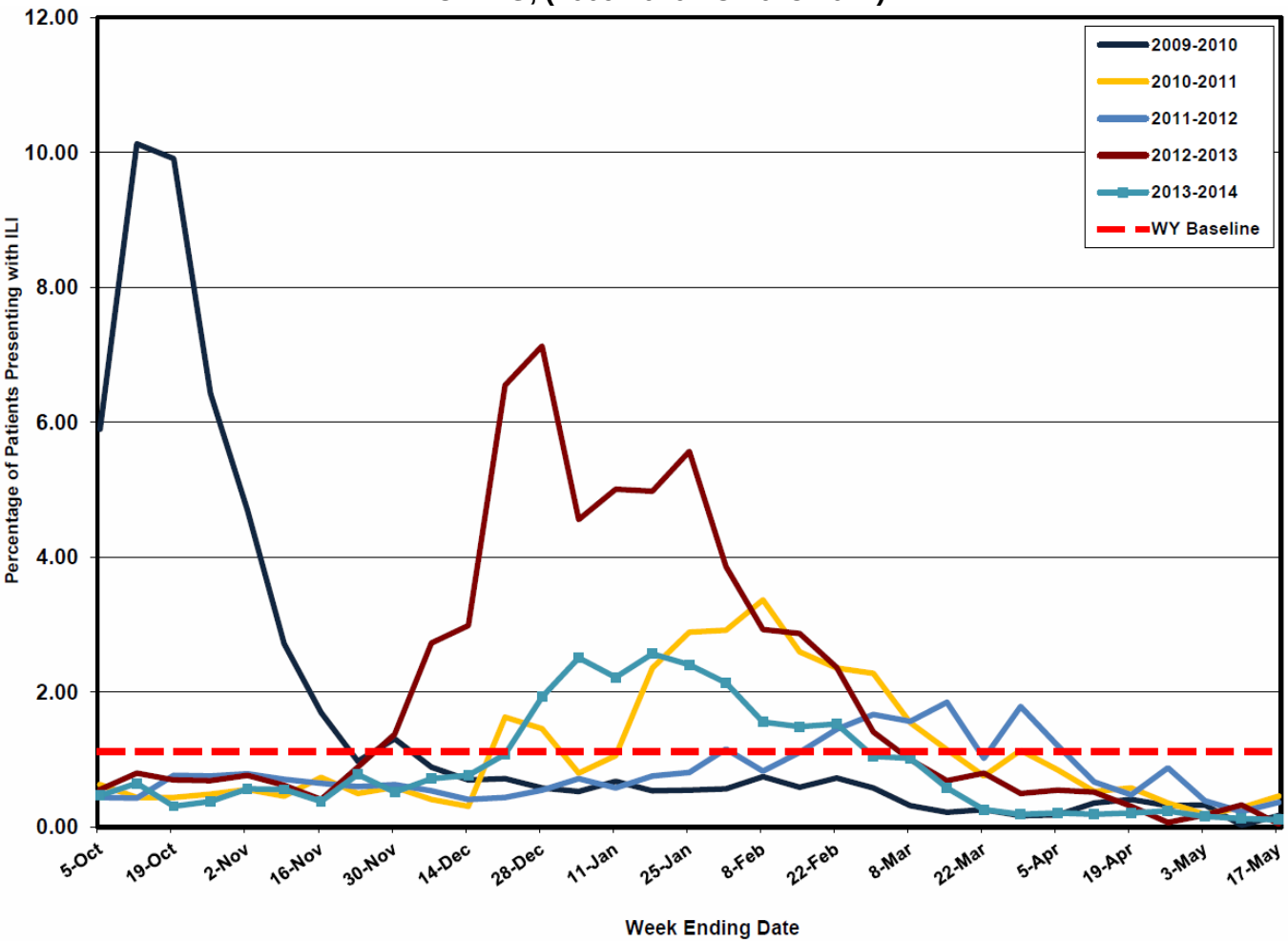
On a national level, WHO and the National Respiratory and Enteric Virus Surveillance System collaborating laboratories tested a total of 304,291 specimens for influenza viruses during the 2013-2014 influenza season and 52,744 (17.3%) were positive. Among the 52,744 influenza viruses, 46,354 (87.9%) were influenza A viruses and 6,390 (12.1%) were influenza B viruses. The collaborating laboratories subtyped 31,325 (67.6%) of the 46,354 influenza A viruses: 28,322 (90.4%) were 2009 influenza A (H1N1) viruses; 3,002 (9.6%) were influenza A (H3N2) viruses; and one was variant influenza A (H3N2v) virus. During the 2013-2014 influenza season, 2009 influenza A (H1N1), influenza A (H3N2), variant influenza A (H3N2v), and influenza B viruses co-circulated in the United States. Overall, 2009 influenza A (H1N1) viruses were the most commonly reported influenza virus type and subtype throughout the influenza season. Specifically, 2009 influenza A (H1N1) viruses were predominant in Region 8 of the U.S. Department of Health and Human Services (DHHS) during the weeks preceding the influenza peak in Wyoming. The State of Wyoming is located within DHHS Region 8. This season marked the first season since the 2009 influenza pandemic that 2009 influenza (H1N1) viruses were the predominant influenza subtype circulating across the United States. Although 2009 influenza A (H1N1) viruses predominated, influenza A (H3N2) and influenza B viruses co-circulated across the state. However, the relative proportion of each type and subtype of influenza viruses varied by region and week.

Most of the influenza viruses sent to CDC for further characterization were antigenically similar to one of the components of the 2013-2014 Northern Hemisphere vaccine. As of May 17, 2014, CDC antigenically characterized 2,815 influenza viruses collected by United States laboratories since October 1, 2013. Two thousand five (99.8%) of 2,008 2009 influenza A (H1N1) viruses were characterized as A/California/7/2009-like, the 2009 influenza A (H1N1) component of the 2013-2014 influenza vaccine for the Northern Hemisphere. Three (0.2%) of the 2009 influenza A (H1N1) viruses showed reduced titers with antiserum produced against A/California/7/2009. Four hundred six (95.3%) of 426 influenza A (H3N2) viruses were characterized as A/Texas/50/2012-like, the influenza A (H3N2) component of the 2013-2014 influenza vaccine for the Northern Hemisphere. Twenty (4.7%) of the influenza A (H3N2) viruses tested showed reduced titers with antiserum produced against A/Texas/50/2012-like. Laboratories characterized 268 of the 269 (70.6%) B/Yamagata-lineage viruses as B/Massachusetts/2/2012-like, the recommended influenza B component for the 2013-2014 Northern Hemisphere influenza vaccine. However, one virus showed reduced titers with antiserum produced against B/Massachusetts/2/2012-like. Laboratories identified the remaining 112 (29.4%) influenza B viruses as belonging to B/Victoria-lineage of the viruses. Overall, the 2013-2014 influenza vaccine matched the circulating strains of influenza virus in the United States.

OUTPATIENT INFLUENZA-LIKE ILLNESS (ILI) REPORTS FROM WYOMING SENTINEL SITES

The ILINet website is a data repository for healthcare providers to record aggregated data on patients with ILI symptoms. Each week, ILINet providers reported the total number of patients seen and the number of those patients with ILI by age group. Chart 3 illustrates ILI reported by Wyoming ILINet providers. Influenza and ILI morbidity started the influenza season below the baseline level (0 - 1.12%); ILI activity among the network of ILINet providers remained below the baseline until the week ending December 28, 2013 (MMWR Week 52). The peak percentage of patient visits for ILI was 2.57%, which occurred the week ending January 18, 2014 (MMWR Week 03). Conversely, the number of reported cases peaked the previous week; January 11, 2014 (MMWR Week 02). Additionally, ILI activity among the ILINet providers remained above the baseline until the week ending March 1, 2014 (MMWR Week 09). In comparison, during the 2012-2013 influenza season the peak percentage of patient visits for ILI was 7.13%, which occurred the week ending December 29, 2012 (MMWR Week 52).

CHART 3: WEEKLY ILI REPORTING BY ILINET PROVIDERS WYOMING, (2009-2010 TO 2013-2014)



REPORTED INFLUENZA-ASSOCIATED DEATHS

Influenza-associated deaths are a reportable condition in the State of Wyoming. Influenza-associated deaths are defined as deaths occurring in Wyoming residents, in which an influenza infection was the primary cause or a contributing cause of mortality listed on an individual's death certificate. Tracking death certificates is currently the best surveillance system to capture and identify influenza-associated deaths in Wyoming. However, according to CDC, influenza is infrequently listed on death certificates and testing for seasonal influenza infections is usually not done, particularly among the elderly who are at greatest risk of seasonal influenza complications and death. Therefore, public health officials may not identify influenza-associated deaths in many instances; consequently, this surveillance system may underestimate the true impact of influenza-associated deaths in the state.

This season, the WDH-Vital Statistics Services Unit reported twelve influenza-associated deaths (2.13 per 100,000). Wyoming did not report any pediatric deaths during the 2013-2014 influenza season. The median age of the twelve influenza-associated deaths was 54 years, with three (25.0%) of the deaths occurring in individuals 65 years of age or older. The remaining nine (75.0%) influenza-associated deaths occurred in individuals under the age of 65 years. In comparison, during the 2012-2013 influenza season, the median age of influenza-associated deaths was 86 years and over 85% of the deaths occurred in individuals 65 years of age and older. Public health officials linked the majority of reported influenza-associated deaths with 2009 influenza A (H1N1) virus infections. One death was associated with an influenza B infection. The influenza-associated death linked to the influenza B infection occurred after the influenza peak; the case was one of the six (50.0%) influenza-associated deaths occurring after the influenza peak, the week ending January 11, 2014 (MMWR Week 02). Influenza A (H3N2) was the predominant influenza virus circulating during the 2010-2011 through 2012-2013 influenza seasons. According to CDC, influenza seasons during which influenza A (H3N2) viruses predominate are typically associated with higher rates of hospitalizations and deaths among the elderly. The 2013-2014 influenza season marked the first time in four seasons that the influenza A (H3N2) virus was not the predominant circulating seasonal influenza virus; this may partially explain the disproportionate number of influenza-associated deaths in individuals under the age of 65 years.

COMPOSITION OF THE 2013-2014 VACCINE

Public health officials select the influenza viruses for seasonal influenza vaccines each year based on information gathered over previous influenza seasons. Researchers study the strains of viruses infecting humans and how they are changing. One hundred forty-one National Influenza Centers (NIC), located in 111 different countries, gather circulating influenza strains and information on disease trends. The four WHO Collaborating Centers for Reference and Research on Influenza analyze the combined data. Based on this information, experts forecast which viruses are likely to circulate during the upcoming influenza season, and WHO recommends specific virus strains to make the vaccine. Each February, the WHO makes the final recommendations for vaccines produced for the Northern Hemisphere. Each country then uses the recommendations made by the WHO to assist with national decisions of what virus strains to include in the influenza vaccine supply for their country. In the United States, an advisory committee convened by the Food and Drug Administration (FDA) makes the final decision about vaccine strains in February. Manufacturers grow vaccine strains based on these recommendations.

Currently, there are primarily three types of influenza viruses circulating in humans: influenza A (H1N1) viruses, influenza A (H3N2) viruses, and influenza B viruses. Each year, vaccine manufacturers use one influenza virus strain from each of the three circulating viruses to produce the trivalent seasonal influenza vaccine. The WHO recommended the vaccine virus strains for the 2014-2015 Northern Hemisphere Trivalent Influenza Vaccine. The FDA - Vaccines and Related Biological Products Advisory Committee (VRBPAC) agreed with the recommendations for the United States influenza vaccine supply. Both agencies recommend that the vaccine contain A/California/7/2009-like (2009 H1N1); an A (H3N2) virus antigenically like the cell-propagated, or cell-grown, virus A/Victoria/361/2011 (A/Texas/50/2012); and a B/Massachusetts/2/2012-like (B/Yamagata lineage) virus. Researchers recommend quadrivalent vaccines contain an additional influenza B virus; thus adding the B/Brisbane/60/2008-like (B/Victoria lineage). Researchers based the new vaccine recommendations on global influenza virus surveillance data related to antigenic characteristics, serological responses to 2013-2014 seasonal vaccines, and the availability of candidate strains and reagents.

VACCINE EFFECTIVENESS

Vaccine effectiveness depends on how closely related, or matched, the viruses in the vaccine are to the influenza viruses circulating that season and on how well a vaccinated person responds to the vaccine in terms of producing protective antibody. In years when the vaccine strains and the virus strains are well-matched, public health officials measure substantial benefits from vaccination in terms of preventing influenza illness. According to CDC, even during years when the vaccine match is very good, the benefits of vaccination will vary across the population, depending on characteristics of the person being vaccinated and even, potentially, which vaccine was used. In the United States, public health officials recommend annual vaccinations against influenza for all persons aged 6 months and older. Since the 2004-2005 influenza season, CDC has conducted studies to estimate how well the seasonal influenza vaccine protects against influenza-associated medical visits. Researchers conducted an early season estimate on the 2013-2014 influenza season to evaluate the effectiveness of the influenza vaccine for preventing laboratory confirmed influenza infections. Although the current data is limited, researchers will publish future studies to examine the effectiveness of the current influenza vaccine.

In February 2014, CDC presented interim vaccine effectiveness estimates for the 2013-2014 influenza season during the Advisory Committee on Immunization Practices (ACIP) meeting. The estimates represent U.S. Influenza Vaccine Effectiveness Network enrollees from the 2013-2014 influenza season; however, the information only represents early season estimates and as a result, interim estimates. Researchers based the interim vaccine effectiveness estimates on patients enrolled through January 23, 2014. Overall, the estimated vaccine effectiveness against influenza A and influenza B was 61% (95% confidence interval [CI]: 52% to 68%). The estimates include adjustments for study site, age, sex, race/ethnicity, self-rated health, and days from illness onset. The 2009 influenza A (H1N1) pandemic virus that emerged during the 2008-2009 influenza season accounted for 98% of the viruses detected by network providers during the early part of the season. The overall adjusted vaccine effectiveness against laboratory-confirmed 2009 influenza A (H1N1) was 62% (95% CI: 53% to 69%). According to CDC, all age groups observed similar vaccine effectiveness against the 2009 influenza A (H1N1) virus. The interim results presented during the ACIP meeting indicate that 2013-2014 influenza season vaccinations reduced the risk for influenza-associated medical visits by approximately 61%, effectively demonstrating the benefits of influenza vaccination during the current season. Furthermore, the age-adjusted interim vaccine effectiveness estimates for the 2013-2014 influenza vaccine suggest continued effectiveness in preventing outpatient medical visits associated with 2009 influenza A (H1N1) virus

infections. The 2009 influenza A (H1N1) viruses have continued to circulate each season since the 2009 pandemic, but the 2013-2014 influenza season is the first season since the 2009-2010 influenza season that the viruses have predominated. Interim vaccine effectiveness estimates for the 2013-2014 influenza vaccine for prevention of 2009 influenza A (H1N1) virus-associated outpatient acute respiratory illness (ARI) visits were similar to vaccine effectiveness estimates for monovalent pandemic and seasonal influenza vaccines for prevention of outpatient medical visits associated with 2009 influenza A (H1N1) virus infections during previous influenza seasons. Additionally, over 99% of the 2009 influenza A (H1N1) viruses tested by CDC, including viruses from the U.S. Influenza Vaccine Effectiveness Network, were antigenically similar to A/California/7/2009, the influenza A (H1N1) component of the 2013-2014 and 2014-2015 influenza vaccines. Since the information in this section reflects early season vaccine effectiveness, it is likely that end-of-season vaccine effectiveness estimates could change as additional patient data becomes available to researchers. Also, the vaccine effectiveness estimates in this section are limited to the prevention of outpatient medical visits, rather than more severe illness outcomes, such as hospitalization or death. Therefore, this lack of data warrants additional studies to measure vaccine effectiveness against more severe outcomes.

ANTIVIRAL AGENTS FOR INFLUENZA

The FDA approved and recommended two antiviral drugs for use against influenza: zanamivir and oseltamivir. Table 2 presents an overview of the indications, administration, and use of antiviral medications. Zanamivir and oseltamivir are in a class of medication known as neuraminidase inhibitors. They are active against both influenza A and B viruses. Antiviral resistance to oseltamivir and zanamivir among circulating influenza viruses is currently low. Additionally, antiviral resistance can emerge during or even after treatment of certain patients with influenza. For example, this can occur in patients that are immunosuppressed. Clinical trials and observational data show that early antiviral treatment can shorten the duration of fever and illness symptoms, may reduce the risk of complications from influenza, and shorten the duration of hospitalization. Clinical benefit is greatest with early administration of antiviral treatment, especially within 48 hours of influenza illness onset. For additional information on antiviral medications during the 2013-2014 influenza season, please visit: http://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm.

TABLE 2: RECOMMENDED DOSAGE & SCHEDULE OF INFLUENZA ANTIVIRAL MEDICATIONS FOR TREATMENT OR CHEMOPROPHYLAXIS, 2013-2014 INFLUENZA SEASON

Antiviral Agent	Activity Against	Use	FDA Approved For	Not Recommended for Use in	Adverse Events
Oseltamivir (Tamiflu®)	**Influenza A and B**	**Treatment**	Any age	N/A	**Adverse events:** nausea, vomiting. Sporadic, transient neuropsychiatric events (self-injury or delirium) mainly reported among Japanese adolescents and adults.
		Chemoprophylaxis	3 months and older	N/A	
Zanamivir (Relenza®)	**Influenza A and B**	**Treatment**	7 years and older	People with underlying respiratory disease (e.g., asthma or COPD)	**Allergic reactions:** oropharyngeal or facial edema. **Adverse events:** diarrhea, nausea, sinusitis, nasal signs and symptoms, bronchitis, cough, headache, dizziness, and ear, nose and throat infections.
		Chemoprophylaxis	5 years and older	People with underlying respiratory disease (e.g., asthma or COPD)	

AVIAN INFLUENZA A VIRUSES IN HUMANS

Influenza A viruses have been identified in various animals species around the world. Typically, certain subtypes of influenza A viruses are specific to certain species. However, avian species are the exception; birds are hosts to all known subtypes of influenza A viruses. Currently, influenza A H3N2 and H1N1 viruses are the main subtypes of influenza A viruses circulating in humans. Occasionally, public health officials receive reports of sporadic human infections with avian influenza A viruses. The reported illnesses in humans associated with avian influenza A virus infections have ranged from mild to severe. The symptoms are usually similar to infections with human influenza viruses. Therefore, it is difficult for healthcare providers to diagnose avian influenza infections by clinical signs and symptoms alone. Laboratory testing is necessary to confirm suspected cases of avian influenza virus infections. Public health officials continue to monitor and track cases of avian influenza A viruses due to the unpredictable nature of viruses. Specifically, avian influenza A viruses have the potential to change and possibly even gain the ability to spread easily from person-to-person. As avian influenza A viruses continue to evolve in unpredictable ways, it is important for public health officials to monitor the epidemiology of circulating viruses in order to understand the risk of avian influenza in human populations.

During the 2013-2014 influenza season, the WHO reported new human infections with highly pathogenic avian influenza A (H5N1) viruses. The virus is highly contagious among birds, and can be deadly to them, especially domestic poultry. Highly pathogenic avian influenza A (H5N1) viruses in humans are rare and typically do not spread easily from person-to-person. Most of the cases are severe with death occurring in approximately 60% of the reported cases. Since 2003, the WHO received approximately 650 reports of human infections with highly pathogenic avian influenza A (H5N1) viruses. The reported cases span four continents and fifteen countries. Highly pathogenic avian influenza A (H5N1) viruses have not been detected in people or birds in the United States. Also during the 2013-2014 influenza season, the WHO reported new human infections with avian influenza A (H7N9) viruses. China reported the first human infections with the novel avian influenza A viruses during the 2012-2013 influenza season. Public health officials identified the new avian influenza virus as avian influenza A (H7N9) virus. Additionally, researchers detected the virus in birds within China. Available evidence indicated that most people contracted the disease after exposure to birds or environments contaminated with bird flu virus. Clinically, some of the cases had mild illness; however, most patients had severe respiratory illness. The human cases of H7N9 infections were isolated to Asia; the new avian influenza A (H7N9) virus has not been detected in people or birds in the United States.

REPORTING REMINDER

All of the following are reportable to the WDH-Infectious Disease Epidemiology Unit: laboratory confirmed cases of influenza, influenza-associated deaths; Furthermore, state statutes require both attending healthcare providers/hospitals and laboratories performing diagnostic testing to report cases of influenza. Healthcare providers can fax reports to the WDH secure fax line at (307) 777-5573. In addition, WDH requests that hospitals submit respiratory specimens to the WPHL on all hospitalized patients with ILI or clinical suspicion of influenza regardless of the laboratory results. Influenza and other infectious diseases listed on the reportable disease list are located at the following link: http://health.wyo.gov/phsd/epiid/reporting.html.